



January 30, 2017

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RETURN RECEIPT REQUESTED

Chief, Air and TRI Section
Enforcement Division
U.S. Environmental Protection Agency Region 9
75 Hawthorne Street
San Francisco, California 94105

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RETURN RECEIPT REQUESTED

Director, Air Enforcement Division
Office of Civil Enforcement
U.S. EPA Headquarters, MC 2242A
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460

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RETURN RECEIPT REQUESTED

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
Box 7611 Ben Franklin Station
Washington, D.C. 20044-7611
Re: DOJ No. 90-5-2-1-10459

**Re: United States v. Asarco
Consent Decree No. CV-15-02206-PHX-DLR
Quarterly Report for the Fourth Quarter of 2016**

Presented below is Asarco's quarterly report for the fourth quarter of 2016, as required by paragraphs 55 and B.36 of the above-referenced consent decree. Consent Decree reporting requirements are in bold italics followed by the required report information.

Paragraph 55.a.i: Emissions and monitoring data and corrective action records, including the following:

(1) The results of any performance tests that were required by the Consent Decree;

Smelter Method 5 Performance Tests:

Method 5 performance testing was performed at the secondary hood baghouse, anode baghouse, and R&R Cottrell ESP during the month of September 2016. The result summary report pages titled "Anode Baghouse PM Emission Results Summary", "Secondary Hood

Baghouse PM Emission Results Summary” and “R&R Cottrell PM Emission Results Summary” are included in the enclosed compact disk.

Smelter Method 5B Performance Tests:

Method 5B performance re-testing was performed at the acid plant during the month of December 2016. The pdf report titled “12-19,21-16 Asarco AP PDF PT RLW” for this testing is included in the enclosed compact disk.

Concentrator Method 5 Performance Tests:

Method 5 performance testing was performed at all 10 wet scrubbers at the concentrator during the month of November 2016. The result summary report pages titled “Hayden Operation Scrubber PM Emission Results Summaries” are included in the enclosed compact disk.

Flash Furnace, Converter, and Anode Buildings Opacity Performance Tests:

N/A. The due date for the submittal of a performance test plan per 40 C.F.R. § 63.1450(c) is 60 days after the completion of the converter retrofit project (CRP).

- (2) Copies of any Visible Emissions evaluations or records for which opacity was 4 percent or greater for the building housing the flash furnace, converters, and anode furnaces (to include date, time, and duration of the opacity);**
- (3) A description of any corrective actions taken to address the opacity from the building housing the flash furnace, converters, and anode furnaces (to include the date and time such actions were commenced and completed), along with a description of the cause of the opacity;**

Exceedance(s) of 4% opacity limit applicable to visible emissions from the flash furnace, anode furnaces, and converter and not yet superseded by requirements related to the installation of the long-path optical density monitors:

N/A. Dependent upon CRP completion.

Investigation(s), cause(s) and corrective action(s) taken:

N/A. Dependent upon CRP completion.

- (4) Dates, times, and duration of each bag leak detection system alarm sounding, the cause of the alarm and the date and time that ASARCO commenced investigation of the baghouse, and a description of the corrective actions taken, if any, along with the date and time such corrective actions were completed;**
- (5) The total alarm time for each bag leak detection system, as determined in accordance with subparagraph 26.a.v;**

Total alarm time for each bag leak detection system:

The secondary hood baghouse had the following alarms during the fourth quarter of 2016.

Date	Time of Alarm	Total Duration of Alarm (hours)	Module Number
11/21/2016	14:48 – 14:53	0.08	5
11/21/2016	16:30 – 20:17	3.78	5
11/21/2016	17:43 – 17:44	0.02	6
12/16/2016	11:14 – 11:51	0.62	5
12/16/2016	12:51 – 13:47	0.93	5
12/16/2016	23:05 – 23:43	0.63	5
12/17/2016	0:20 – 0:49	0.48	5
12/17/2016	3:34 – 4:36	1.03	5
12/17/2016	5:02 – 6:21	1.32	5

The anode baghouse had the following alarms during the fourth quarter of 2016.

Date	Time of Alarm	Total Duration of Alarm (hours)	Module Number
10/9/2016	21:31 – 21:32	0.02	3
10/10/2016	2:32 – 8:35	6.05	3
10/10/2016 to 10/11/2016	19:46 (10/10) – 7:26 (10/11)	11.33	3
10/11/2016 to 10/12/2016	12:56 (10/11) – 10:16 (10/12)	21.33	3
10/12/2016	13:41 – 14:17	0.6	3
10/12/2016	15:54 – 16:06	0.2	3
10/12/2016	18:07 – 18:19	0.2	3
10/12/2016	20:07 – 20:31	0.4	3
10/12/2016	22:08 – 22:21	0.22	3
10/13/2016	0:33 – 0:46	0.22	3
10/13/2016	2:09 – 2:22	0.22	3
10/13/2016	3:58 – 4:58	1.0	3
10/13/2016	6:23 – 8:48	2.42	3
10/13/2016	21:36 – 23:01	1.42	3
10/14/2016	5:13 – 5:48	0.58	3
11/23/2016	11:09 -11:10	0.02	4

Exceedance(s) of alarm limit of no more than 5% of total operating time in any 6-month period:

<i>Secondary Hood Baghouse: July 1, 2016 – Dec. 31, 2016</i>	
Total duration of bag leak detection system alarm hours	8.89
Total hours of source operation	4032
Percent of time in alarm (operating hours)	0.22%

<i>Anode Baghouse: July 1, 2016 – Dec. 31, 2016</i>	
Total duration of bag leak detection system alarm hours	46.23
Total hours of source operation	4032
Percent of time in alarm (operating hours)	1.14%

Note: The Hayden Smelter was down from November 4, 2016 through November 21, 2016 for a maintenance outage and to tie in the new wet gas cleaning equipment. No processing equipment was operating during this time period.

Investigation(s), cause(s) and corrective action(s) taken:

The alarm on November 21, 2016 from 14:48 – 14:53 occurred when the secondary hood baghouse was not operating prior to the start up from the smelter maintenance outage in November 2016. The alarms that occurred on November 21, 2016 from 16:30 – 20:17 and 17:43 – 17:44 were the result of rust residue left in the air lines from maintenance activities during the November 2016 outage which had become re-entrained in the baghouse during the startup from the outage and no corrective action was necessary. The alarms from December 16, 2016 through December 17, 2016 were all caused by a leak in Module 5's pulse jet air line which caused the bags to be pulsed at a lower psi. On December 19, 2016 the leak in the air line was repaired.

The alarms on the anode baghouse from October 9 -12, 2016 were caused by leaky bags. During the October 9-12, 2016 timeframe, the baghouse maintenance crew's daily inspection noted that several bags that were observed to have holes and/or tears in them. Those bags that had holes/tears were replaced that same day (approximately 5-10 bags per day). However, it became apparent that all bags in Module 3 were defective and all bags were subsequently replaced in Module 3 on October 13, 2016. The alarms that occurred on October 13, 2016 were due to the bag replacement activities that occurred that day. The alarm on October 14, 2016 was caused by dust remaining in the tubesheet of Module 3 from the replacement of all bags in that module the previous day. The alarm that occurred on November 23, 2016 was caused by an over accumulation of dust in the collection hopper which was cleared out that same day.

(6) Dates, times, and duration of any instances where pressure drop or scrubber liquid flow rates were outside the established ranges for those parameters, the date and time that ASARCO initiated investigation, the readings at the time of the issue, a description of the underlying cause for those readings, and a description and explanation of any corrective actions, including the date and time that such actions were commenced and completed;

Hourly (block) average pressure drop(s) and liquid flow rate(s) outside range established in most recent Method 5 test:

The hourly block averages outside the established range(s) are detailed in the enclosed compact disk.

Investigation(s), cause(s) and corrective action(s) taken:

The investigation(s), cause(s) and corrective action(s) taken for each event are detailed in the enclosed compact disk.

Times scrubber(s) not in service or believed to be malfunctioning:

The times that the scrubber(s) were not in service or believed to be malfunctioning are detailed in the enclosed compact disk.

(7) Dates, times, and descriptions of deviations from the gas capture parametric monitoring requirements and/or limits of Paragraph 9;

PRIMARY HOODING PARAMETER:

Failure(s) to achieve minimum air infiltration ratio of 1:1 during blowing when improved hood is operational averaged over 24 blowing hours rolled hourly:

N/A. Dependent upon CRP completion.

Investigation(s), cause(s) and corrective action(s) taken:

N/A. Dependent upon CRP completion.

SECONDARY HOODING PARAMETER DURING BLOWING:

Failure(s) to achieve minimum exhaust rate of 35,000 SCFM at a converter averaged over 24 blowing hours rolled hourly, unless an alternative parameter has been approved:

N/A. Dependent upon CRP completion.

Investigation(s), cause(s) and corrective action(s) taken:

N/A. Dependent upon CRP completion.

SECONDARY HOODING PARAMETER DURING NON-BLOWING:

Failure(s) to achieve minimum exhaust rate of 133,000 SCFM at a converter averaged over 24 non-blowing hours rolled hourly, unless an alternative parameter has been approved:

N/A. Dependent upon CRP completion.

Investigation(s), cause(s) and corrective action(s) taken:

N/A. Dependent upon CRP completion.

SECONDARY HOODING PARAMETER WHEN HOOD DOORS ARE CLOSED:

Failure(s) to achieve minimum negative pressure drop across a hood of 0.03 mm of Hg (0.007 inches of water), unless an alternative parameter has been approved:

N/A. Dependent upon CRP completion.

Investigation(s), cause(s) and corrective action(s) taken:

N/A. Dependent upon CRP completion.

TERTIARY HOODING PARAMETER AT ALL TIMES MATERIAL IS PROCESSED IN COPPER CONVERTER DEPARTMENT:

Failure(s) to achieve minimum exhaust rate of 400,000 ACFM averaged over 24 hours of copper converter department material processing rolled hourly, unless an alternative parameter has been approved:

N/A. Dependent upon CRP completion.

Investigation(s), cause(s) and corrective action(s) taken:

N/A. Dependent upon CRP completion.

(8) Dates, times, and descriptions of deviations when ASARCO operated the furnaces, capture systems, baghouses, R&R Cottrell, or any other equipment in a manner inconsistent with the approved Operations and Maintenance Plan;

N/A. The Hayden Operations Operation and Maintenance Plan was submitted to EPA on December 21, 2016. The Operations and Maintenance Plan has not yet been approved by EPA.

(9) Dates, times, and descriptions of deviations when ASARCO's material handling was carried out in a manner inconsistent with the approved Operations and Maintenance Plan and/or Fugitive Dust Plan;

OPERATION AND MAINTENANCE PLAN

The Hayden Operations Operation and Maintenance Plan was submitted to EPA on December 21, 2016. The Operations and Maintenance Plan has not yet been approved by EPA.

FUGITIVE DUST CONTROL PLAN

The Fugitive Dust Plan, including the remaining engineering designs, was submitted to EPA on June 24, 2016 for EPA approval. On December 7, 2016 Asarco received comments from EPA regarding the submitted Fugitive Dust Plan and Asarco is in the process of responding to those comments.

Deviation(s) from material handling requirements of approved fugitive dust control plan and corrective action(s) taken:

Fugitive Dust Plan has been submitted and is awaiting EPA approval.

Exceedance(s) of 15% Method 9 opacity limit on visible emissions from any source listed in the approved fugitive dust control plan (i.e., sources other than the furnaces and converter building) and corrective action(s) taken:

Fugitive Dust Plan has been submitted and is awaiting EPA approval.

Opacity readings outside major openings of secondary and tertiary crushers Total Enclosure or fine ore storage building in excess of minimum measurable opacity level over 6-minute period using long-path optical density monitors and corrective action(s) taken:

Fugitive Dust Plan has been submitted and is awaiting EPA approval.

Event(s) when DCS system recorded data outside of established operational parameters, investigation(s), cause(s), corrective action(s), and degree of success:

Fugitive Dust Plan has been submitted and is awaiting EPA approval.

Dates and times when DCS system was not recording data:

Fugitive Dust Plan has been submitted and is awaiting EPA approval.

AMBIENT MONITORING NETWORK

Ambient monitoring network raw data and calculated ambient levels for the fourth quarter of 2016 are enclosed with this report on a compact disc. Note the Fugitive Dust Plan has been submitted and is awaiting EPA approval.

HIGH WIND EVENTS

High Wind Event data for the fourth quarter of 2016 is enclosed with this report on a compact disc. Note the Fugitive Dust Plan has been submitted and is awaiting EPA approval.

(10) Dates, times, and descriptions (including emissions data) of any periods where ASARCO failed to meet an emission limit or an emissions control efficiency established under this Consent Decree;

ACID PLANT PM EMISSION LIMIT

Exceedance(s) of 6.2 mg/dscm limit as demonstrated through performance testing:
None

SECONDARY HOOD BAGHOUSE EMISSION LIMIT

Exceedance(s) of 23 mg/dscm limit as demonstrated through performance testing: None

ANODE FURNACE BAGHOUSE PM EMISSIONS LIMIT

Exceedance(s) of 23 mg/dscm limit as demonstrated through performance testing: None

R&R COTTRELL ESP PM EMISSIONS LIMIT

Exceedance(s) of 23 mg/dscm limit as demonstrated through performance testing: None

COPPER CONCENTRATE DRYER PM EMISSIONS LIMIT

The copper concentrate dryer emissions are routed to the existing R&R Cottrell ESP. See above section regarding the R&R Cottrell ESP PM Limit compliance.

FLASH FURNACE TAPPING/SKIMMING EMISSIONS CAPTURE SYSTEM PM EMISSIONS LIMIT

The flash furnace tapping/skimming emissions capture system is routed to the existing R&R Cottrell ESP. See above section regarding the R&R Cottrell ESP PM Limit compliance.

PROCESS-WIDE TOTAL PM EMISSIONS LIMIT

The due date for beginning the use of a measuring system described in paragraph 24.a of the decree is June 1, 2019.

Exceedances of 0.6 lb PM per ton of concentrate smelted total PM limit(s):

N/A. Dependent upon CRP completion.

Investigation(s), causes(s) and corrective action(s) taken:

N/A. Dependent upon CRP completion.

DUCON-TYPE WET SCRUBBER OPERATIONAL REQUIREMENTS

Exceedance(s) of 0.05 g/dscm limit: None

*DRY LIME SCRUBBING OF SO₂ ROUTED TO SECONDARY HOOD AND R&R COTTRELL REPLACEMENT BAGHOUSES*Failure(s) to meet applicable control efficiency:

N/A. Dependent upon CRP completion.

Investigation(s), cause(s) and corrective action(s) taken or status of demonstration of technical infeasibility of control efficiency:

N/A. Dependent upon CRP completion.

CORRECTIVE ACTION TRIGGERS FOR ACID PLANT

Date	Time of Trigger Level Alarm	Cause and Corrective Actions Taken if Necessary
		No trigger levels were reached during the fourth quarter of 2016.

SO₂ EMISSIONS LIMIT FOR GASES COLLECTED FROM THE CONVERTERS

Exceedance(s) of applicable 650 ppmv limit for gases routed to acid plant or secondary hood baghouse or gases in the tertiary hood exhaust:

N/A. Dependent upon CRP completion.

Investigation(s), cause(s) and corrective action(s) taken:

N/A. Dependent upon CRP completion.

(11) *Dates, times and descriptions where ASARCO exceeded the Blowing rate limit set forth in Paragraph 8 and/or, for such time as the Blowing hour limit in Paragraph 8.b remains applicable, the Blowing hour limit;*

Exceedance(s) of converter blowing limit of 32,000 SCFM averaged over 5 minutes of blowing and rolled each minute:

N/A. Dependent upon CRP completion.

TOTAL COMBINED BLOWING TIME OR SO₂ LIMIT ON ACID PLANT TAIL GAS

Exceedance(s) of total combined blowing time limit at all converters of 21 hours per 24-hour period rolled hourly, unless Asarco accepts 100 ppmv SO₂ limit on acid plant tail gas:

N/A. Dependent upon CRP completion.

Investigation(s), cause(s) and corrective action(s) taken:

N/A. Dependent upon CRP completion.

ii. *Status and/or completion of construction or compliance milestones;*

CONVERTER RETROFIT PROJECT

The new wet gas cleaning system equipment was tied in to the process during the November 4 – 21, 2016 smelter outage. The new equipment became operational upon start-up. Key equipment for the Converter Retrofit Project is in the process of being procured and/or delivered to the facility. The general construction contractor, RECON, mobilized in December 2016 and began working on removing the converter aisle monovalent for the installation of the new tertiary hoods. The demolition of the old smelter brick shed began in December 2016 to make room for the installation of the new converters' electrostatic precipitators and new ID fans once the demolition is complete. The planning efforts for the converter department utility relocation began. See also the PowerPoint presentation titled "Hayden CRP 4Q2016 Status" for additional information.

R&R COTTRELL ESP REPLACEMENT BAGHOUSE

The replacement baghouse and ID fan have both been ordered.

DRY LIME SCRUBBING OF SO₂ ROUTED TO BAGHOUSES

The engineering design efforts are still underway for the dry lime scrubbing systems and are expected to be completed in January 2017. Once the engineering efforts have been completed the dry lime scrubbing systems will be ordered.

PREPARATION OF FUGITIVE EMISSIONS STUDY PROTOCOL

Asarco selected SLR International Corp. to assist in preparing the fugitive emission study protocol. The protocol for the fugitive emission study was submitted to EPA for approval on June 15, 2016. Asarco received comments on the submitted protocol on December 5, 2016 and is in the process of addressing those comments.

IMPLEMENTATION OF APPROVED FUGITIVE EMISSIONS STUDY PROTOCOL

The due date for the commencement of the fugitive emissions study protocol for the initial study is 6 months after the completion of the converter retrofit project.

LONG-PATH OPTICAL DENSITY MONITORS SPECIFIED IN PROTOCOL

The due date for the installation of the three long-path optical density monitors at the building emission points specified in the fugitive emissions study protocol is 6 months after the completion of the initial fugitive emissions study.

iii. Status of PM CEMS installation and PS-11 testing pursuant to Paragraph 14;

N/A. The Installation, Certification and QA/QC Protocol for the PM CEMS was submitted to EPA for approval on May 3, 2016. On October 7, 2016 Asarco responded to EPA's initial questions regarding the submitted Installation, Certification and QA/QC Protocol for the PM CEMS. On December 5, 2016 Asarco received additional comments from EPA regarding the revised protocol and Asarco is in the process of addressing those comments. The final protocol has not been approved by EPA at this time.

iv. Problems encountered or anticipated with Consent Decree compliance, together with implemented or proposed solutions;

None

v. Status of any permit applications pertaining to any of the requirements of this Consent Decree;

The air quality permit for the converter retrofit project required under the decree was issued by ADEQ on January 19, 2016. This permit revision included the R&R Cottrell replacement baghouse (termed vent gas baghouse) and the dry lime scrubbing systems that will be installed prior to the secondary hood baghouse and new vent gas baghouse.

Preparation of the balance of the conforming permitting required under the decree is ongoing and corresponding permit revision applications will be submitted in a timely manner.

vi. The status of the SEP under Section VIII and Appendix C including, at a minimum, a narrative description of activities undertaken; and

No actions have been taken at this time to procure the new diesel-electric switch locomotive. The due date for purchasing and operating the new diesel-electric switch locomotive is December 30, 2018.

vii. The status of the Environmental Mitigation Projects under Section VII and Appendix A including, at a minimum, a narrative description of activities undertaken; status of Environmental Mitigation Project milestones set forth in Appendix A; and a summary of costs incurred since the previous report.

PINAL COUNTY ROAD PAVING ENVIRONMENTAL MITIGATION PROJECT

The project plan was submitted to EPA for approval on June 16, 2016. On August 5, 2016, Pinal County submitted to EPA its identification of the County's legal authority to accept the funding of the project and conduct the project using the funding. Since the funding is not payable to the County until after the plan is approved, the County has spent \$0.00 on the project as of December 31, 2016.

GILA COUNTY LEAD-BASED PAINT ABATEMENT ENVIRONMENTAL MITIGATION PROJECT

The project plan was submitted to EPA for approval on June 16, 2016. Coordination of the special escrow account under agreement with the County is pending. On August 1, 2016, Gila County submitted to EPA its identification of the County's legal authority to accept the escrow funding of the project and conduct the project using the funding. Since the funding is not payable to the escrow account until after the plan is approved, the County has spent \$0.00 on the project as of December 31, 2016.

55.b Description of any non-compliance with the requirements of this Consent Decree, including those identified in Paragraph 55.a.i and an explanation of the violation's likely cause and the remedial steps taken, to be taken, to prevent or minimize such violation.

There were no issues of non-compliance during the fourth quarter of 2016.

On October 27, 2016 Asarco notified EPA that the acid plant tail gas particulate limit was potentially exceeded and that it had scheduled a re-test of the acid plant tail gas during the week of November 28, 2016. Before the re-test, Asarco had its contractor, Energy and Environmental Measurement Corporation (EEMC), check their stack testing calculations and test parameters, and Asarco inspected the acid plant and make any repairs if necessary during the November 4 – 21, 2016 maintenance outage. On November 30, 2016, Asarco notified EPA that it needed to reschedule the acid plant re-test to the week of December 19, 2016 due to difficulties with the start-up of the new acid plant scrubber blowdown system equipment. The re-test was performed on December 19 -20, 2016 and resulted in an average of 1.2 ug/dscm of non-sulfuric acid particulate matter which was well within the 6.2 ug/dscm non-sulfuric acid particulate matter limit on the acid plant tail gas as reported in Asarco's notification letter dated January 6, 2017. The re-test was also performed within the 365 days from the Effective Date of the Consent Decree as required by Paragraph 16. Asarco attributes the improved results to higher efficiency cleaning of the gas feed to the acid plant (including implementation of the new acid plant scrubber blowdown system), repairs to the acid distribution systems of the contact

sections of the acid plant, and more accurate measurement of the sample weights afforded by the extended test runs, although it is not possible to quantify the relative contributions of each.

PARAGRAPH 58. REPORT CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



Joseph A. Wilhelm
General Manager
Hayden Operations

JAW/rcg

Enclosure